

SHORT COMMUNICATION

Loxosceles chapadensis (Araneae: Sicariidae): a new recluse spider species of the *gaucho* group from Brazil

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Abstract. A new species of the medically important recluse spider genus *Loxosceles* Heineken & Lowe 1832 is described from the State of Bahia, Brazil. The species occurs between rocks and crevices, as well as in and around man-made structures. The new species belongs to the *gaucho* group, as evidenced by the spermathecal shape and color pattern. The presence of a long male palpal tibia is unusual in the *gaucho* group; thus, the inclusion of the new species in this group is discussed.

Keywords: Chapada Diamantina, Bahia, spider of medical importance, taxonomy

The recluse spiders of the genus *Loxosceles* Heineken & Lowe 1832 comprise a large group, with more than one hundred known species so far recorded in temperate and tropical areas of various continents (Platnick 2009), the majority in North and South America (Gertsch 1958, 1967; Gertsch & Ennik 1983). These spiders live in different natural habitats and near or inside houses and buildings. In natural conditions they may live under rocks, tree trunks, in tree holes and other natural openings (Gertsch 1967).

Despite being a taxon of medical importance, with thousands of spider bites recorded yearly, especially in Southern Brazil (Ribeiro et al. 1993; Marques-da-Silva et al. 2005), the genus has received little taxonomic attention in the last decades. Since Gertsch & Ennik's (1983) revision, taxonomic publications have been limited to a few redescriptions and four species descriptions—two from China (Wang 1994), one from Brazil (Martins et al. 2002) and another from Tunisia (Ribera & Planas 2009).

To date, 10 species of *Loxosceles* occurring in Brazil can be divided in four groups according to Gertsch's revision (1967): *Loxosceles adelaida* Gertsch 1967, *Loxosceles gaucho* Gertsch 1967 and *Loxosceles similis* Moenkhaus 1898 (in *gaucho* group); *Loxosceles amazonica* Gertsch 1967 (in *amazonica* group); *Loxosceles anomala* (Mello-Leitão 1917), *Loxosceles hirsuta* Mello-Leitão 1931, *Loxosceles intermedia* Mello-Leitão 1934 (in *spadicea* group); and *Loxosceles laeta* (Nicolet 1849) and *Loxosceles puortoi* Martins et al. 2002 (in *laeta* group). *Loxosceles immodesta* (Mello-Leitão 1917) was poorly described and the type could not be located. Therefore, it cannot be placed in any group. Here we describe a new species of *Loxosceles* belonging to the *gaucho* group, from Northeastern Brazil.

METHODS

Abbreviations.—ALE = anterior lateral eyes; PLE = posterior lateral eyes, PME = posterior median eyes; MNRJ = Museu Nacional do Rio de Janeiro, Rio de Janeiro.

The illustrations were done using a Nikon SMZ1500 dissecting microscope with a camera lucida attachment. Measurements are in mm. The species description format follows Martins et al. (2002);

terminology of genitalia mostly follows Gertsch (1967). All the examined specimens are deposited in MNRJ.

TAXONOMY

Loxosceles Heineken & Lowe 1832

Loxosceles chapadensis sp. nov.

Figs. 1–12

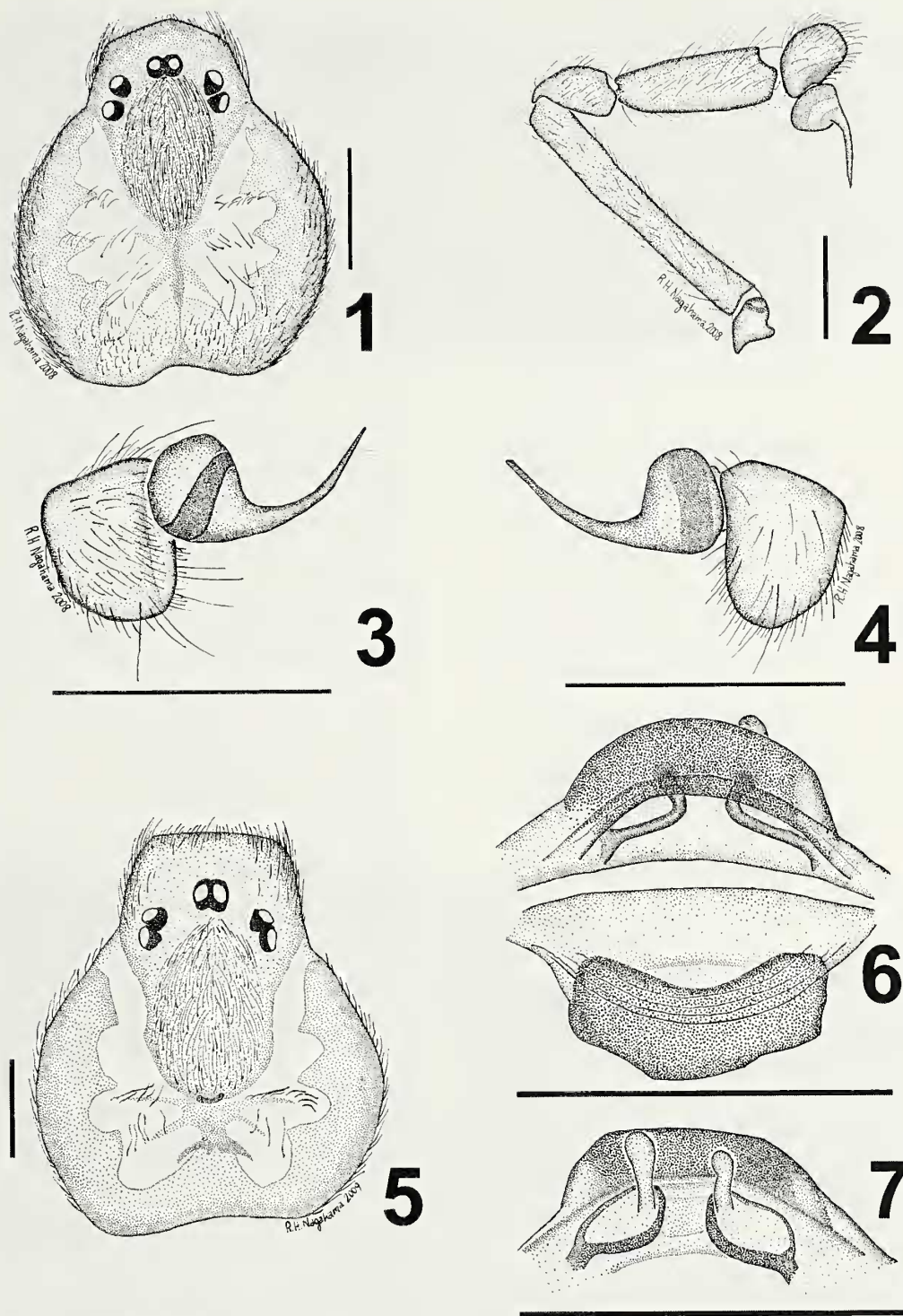
Etymology.—The specific name refers to the type locality of the species, the Parque Nacional da Chapada Diamantina, State of Bahia, Brazil.

Diagnosis.—The male can be readily distinguished from other species by a palpal tibia 2.2 times longer than the cymbium and a thickened embolus (Fig. 2). The female can be recognized by its broad transversal plate, straight, apically enlarged seminal receptacles and dorsal part of the bursa copulatrix strongly sclerotized for half of its length (Fig. 6).

Type material.—*Holotype*: BRAZIL: Bahia, male, Palmeiras, Parque Nacional da Chapada Diamantina (11°28'S, 41°25'W), 15 February 2008, R. Bertani, C.S. Fukushima & R.H. Nagahama, (MNRJ 6047).

Paratypes: BRAZIL: Bahia, 1 female, same locality and collectors of holotype (MNRJ 6048); Lençóis, 3 females, 1 male, Parque Nacional da Chapada Diamantina (12°33'S, 41°23'W), 19 February 2008, same collectors, (MNRJ 6049); Iraquara, 1 female, Fazenda Pratinha (12°21'1.13"S, 41°32'4.82"W), 16 February 2008, same collectors, (MNRJ 6050).

Description.—*Male (Holotype, MNRJ 6047)*: Total length 5.60. Carapace 3.49 long, 2.97 wide. Eye sizes and interdistances: ALE 0.17, PME 0.12, PLE 0.15, PME–PLE 0.41, PME–ALE 0.21; clypeus 0.31. Leg formula II, IV, I, III. Leg lengths: leg I: femur 6.61/ patella 1.07/ tibia 8.04/ metatarsus 7.94/ tarsus 1.61/ total 25.27, II: 8.27/ 1.28/ 9.63/ 10.78/ 1.88/ 31.84, III: 6.47/ 1.09/ 6.52/ 7.56/ 1.64/ 23.28, IV: 7.63/ 1.15/ 7.70/ 8.92/ 1.83/ 27.23. Palp: femur 2.41 long, 0.37 wide; patella 0.75 long, 0.46 wide; tibia 1.45 long, 0.48 wide; cymbium 0.66 long, 0.49 wide. Labium 0.79 long, 0.47 wide. Sternum 1.67 long, 1.35

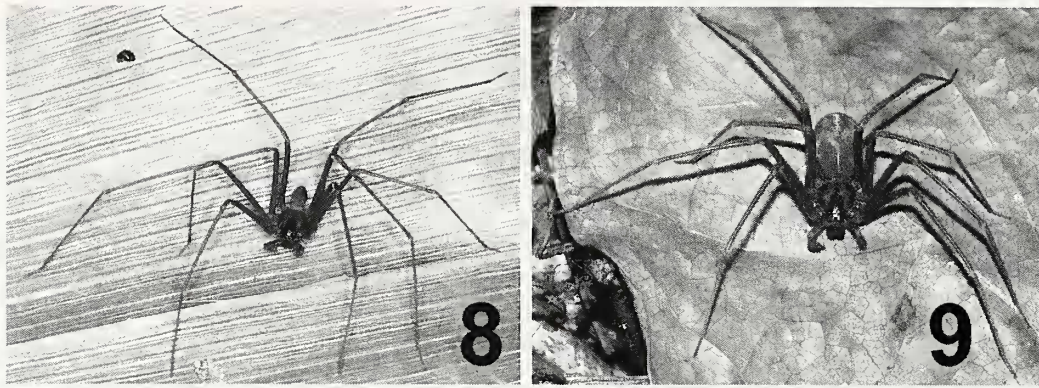


Figures 1–7.—*Loxosceles chapadensis* sp. nov. 1–4. Holotype male: 1. Carapace; 2. left palp; 3. Bulb, prolateral view; 4. Bulb, retrolateral view. 5–7. Paratype female: 5. Carapace; 6. Spermathecae, dorsal view; 7. Spermathecae, ventral view. Scale bars = 1 mm.

wide. Femur I 1.9 times longer than carapace. Palpal femur 6.5 times longer than wide, tibia 3 times longer than wide, cymbium slightly elongated (Fig. 2). Bulb suboval and shorter than cymbium. Embolus slightly curved, approximately two times longer than bulb width, without carina (Figs. 3, 4). Cephalic region of carapace covered by many long setae (Fig. 1). Presence of dentate, dark side bands on the dorsal carapace (Figs. 1, 8). Pars thoracica pale yellow. Legs and palps light brown, covered by short grayish setae on the femora and patellae, becoming gradually brownish from the tibiae to

the tarsi (Fig. 8). Endites, coxae and sternum light brown. Labium dark brown.

Female (Paratype, MNRJ 6048): As in male, except Total length 8.76. Carapace 4.02 long, 3.81 wide. Eye sizes and interdistances: ALE 0.16, PME 0.13, PLE 0.15, PME–PLE 0.46, PME–ALE 0.26; clypeus 0.45. Leg formula II, I, IV, III. Leg lengths: leg I: femur 7.27/ patella 1.46/ tibia 8.47/ metatarsus 7.73/ tarsus 2.07/ total 27.00, II: 8.58/ 1.47/ 10.03/ 9.34/ 1.91/ 31.33, III: 7.11/ 1.35/ 6.68/ 7.58/ 1.70/ 24.42, IV: 7.76/ 1.60/ 7.61/ 7.92/ 1.61/ 26.50. Palp: femur 2.14 long,



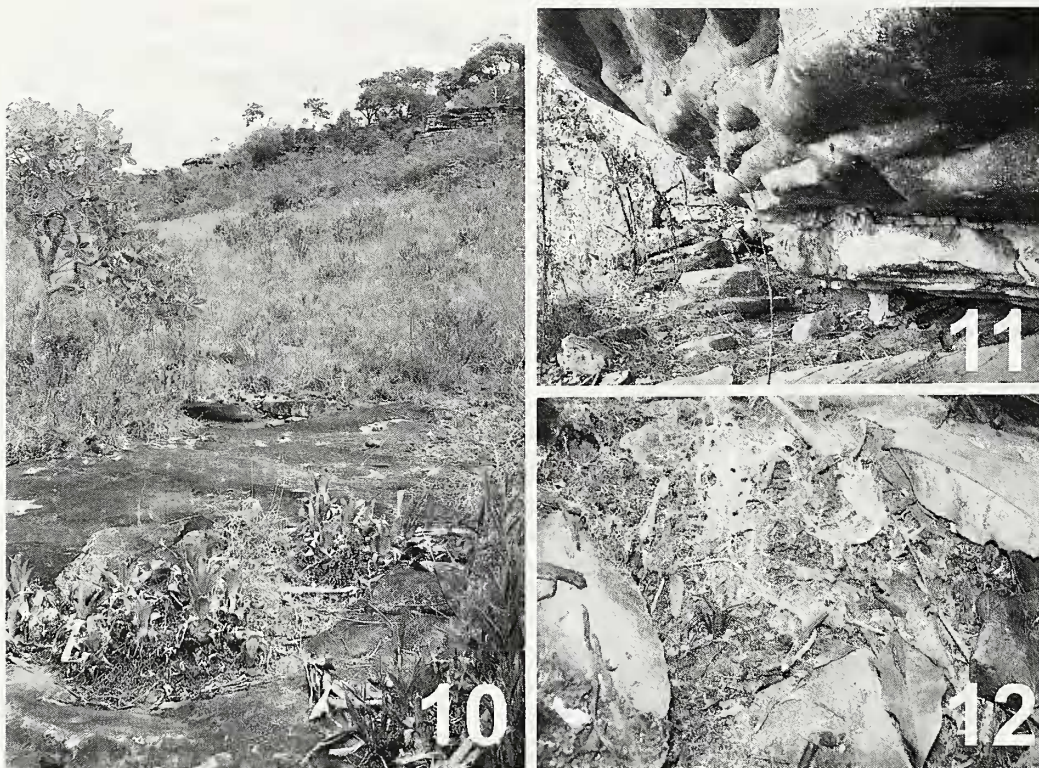
Figures 8–9.—*Loxosceles chapadensis* sp. nov. 8. Male; 9. Female. Photos: R. Bertani.

0.37 wide; patella 0.63 long, 0.43 wide; tibia 1.13 long, 0.46 wide; tarsus 1.88 long, 0.45 wide. Labium 0.92 long, 0.83 wide. Sternum 2.27 long, 1.84 wide. Femur I 1.8 times longer than carapace. Palpal femur 5.8 times longer than wide, tibia 2.5 longer than wide, tarsus not incrassate. Spermathecae with long, straight, apically enlarged seminal receptacles; transversal plate broad, strongly sclerotized; atriobursal orifices hidden under transversal plate, ovals, positioned on the internal edge of the central windows; dorsal part of bursa copulatrix strongly sclerotized for half of its length (Figs. 6, 7). Palps brown, except by pale patellae and distal femora. Endites dark brown.

Natural History.—Individuals of *Loxosceles chapadensis* sp. nov. were collected in rock crevices and under rocks in natural environments at Palmeiras and Lençóis in Bahia State (Figs. 10–12). Other specimens were found under rocks, bricks and roof tiles near human

dwelling at Iraquara, also in Bahia. These localities are in the vicinity of the Parque Nacional da Chapada Diamantina, which contains ecotonal areas of diverse types of vegetation such as the savannah-like formation called “cerrado”; gallery forests; “campo rupestre” areas—which are characterized by their height above sea level (above 900m), in association with a high degree of outcropping and consequent reduction of soil depth (Giulietti & Pirani 1988); Brazilian Atlantic rainforest and “caatinga”, a semi-arid vegetation. All specimens constructed a loose web in their retreat (Fig. 12). A female maintained in captivity constructed two egg sacs. Twenty-seven spiderlings hatched from the first egg sac between 1 and 6 July 2008. The second egg sac, constructed on 3 November 2008, produced 23 spiderlings on 22 December 2008.

Distribution.—Brazil, State of Bahia, northern portion of Parque Nacional da Chapada Diamantina.



Figures 10–12.—Habitat of *Loxosceles chapadensis* sp. nov. in Parque Nacional da Chapada Diamantina, Palmeiras, State of Bahia, Brazil. 10. General view of the area showing Campo Rupestre and Chapada formation; 11. Chapada formation showing crevices and rocks over the ground; 12. Same area showing a removed rock having a specimen of *Loxosceles chapadensis* sp. nov. on its retreat. Photos: C.S. Fukushima.

DISCUSSION

Gertsch (1967) separated the South-American *Loxosceles* into four groups based on the proportions of palpal lengths and specific features of the bulb and embolus in males and spermathecal characteristics of females. The *spadicea* group was characterized by males with short bulbs and thin emboli, and with a carina, and by females bearing small, tubular, widely separated spermathecae. Males of the *laeta* group have palpal tibia two or more times as long as the cymbium, and females have closely positioned seminal receptacles, lacking a transversal plate and apical globular lobes. Males of the *gaucho* and *amazonica* groups have incrassated palpal tibia less than 1.5 times the cymbium length. Females of the *gaucho* group bear spermathecae with a transversal plate, whereas those of *amazonica* group have apical globular lobes.

On the basis of the characteristics mentioned above, *Loxosceles chapadensis* sp. nov. males have some characteristics of the *laeta* group, since the male palpal tibia is two times as long as the cymbium. On the other hand, the female has spermathecae with a broad transversal plate, a characteristic of the *gaucho* group. We prefer to include the new species in the *gaucho* group due to the female's highly modified spermathecae and the presence of a transversal plate. The relatively longer palpal tibia of the male could be a result of homoplasy with species of the *laeta* and *spadicea* groups or even a plesiomorphy, indicating a more basal position of the species in the *gaucho* group relative to these other species. Further, both males and females of the new species have lateral dentate dark bands on the dorsal side of the carapace, which is typical of the *gaucho* group (Figs. 1, 5, 8, 9).

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